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AUTHORS: (8) Starikova, G. V., Presnyakov, A. A.

TITLE: (6) Investigating electric resistivity of the Al-Zn eutectoid

SOURCE: (1) Akademiya nauk Kazakhskoy SSR. Institut metallurgii i obogashcheniya. Trudy. v. 5, 1962, Tsvetnaya metallurgiya, 175 - 178

TEXT: Anomalous high ductility ($\delta = 1,000\%$) is observed in Al-Zn eutectoid after quenching from a temperature exceeding that of eutectoid transformation. This is explained by the course of a diffusion process of stabilization during deformation. The authors attempted to establish also an anomaly in the variation of electric resistivity of the Al-Zn eutectoid. Al-Zn alloy specimens (79% Zn) were annealed and quenched at 320°C . Electric resistivity was measured after different time of holding at room temperature. The electric resistivity of quenched specimens decreased abruptly during the first 8 - 10 minutes after quenching. After measuring electric resistivity at room temperature, the specimens were heated within 5 minutes to 250°C . The electric resistivity of quenched and annealed specimens was then equal, and no anomalous effect was observed.

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served. Measurements of quenched specimens, heated to 130°C with different holding time, showed no anomaly. The experiments prove that the initial stage of decomposition of a quenched Al-Zn eutectoid, proceeding at room temperature, is accompanied by an anomalous effect of increased electric resistivity. But at room temperature the specimen does not fully attain the equilibrium state. The degree of non-equilibrium can be evaluated by the difference in the electric resistivity in quenched and annealed state. During heating the metastable alloy passes over into an equilibrium alloy and the electric resistivities of quenched and annealed specimens show close values. There are 3 figures.

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